

REMARKS

The present application has been reviewed in light of the Office Action dated March 8, 2011. Claims 29-32, 34-36, 38-42, 44-46 and 48 are presented for examination, of which Claims 29, 39 and 48 are in independent form. Claims 30-32, 34-36, 38, 40-42 and 44-46 have been amended purely as to matters of form, to simplify the language. Claims 29, 39 and 48 have been amended to define still more clearly what Applicants regard as their invention. Support for the claim amendments may be found, for example, at page 2, line 29, to page 3, line 9.¹ Favorable reconsideration is requested.

The Office Action rejects Claim 48 under 35 U.S.C. § 112, second paragraph, as being indefinite. Although it is not conceded that the rejection is correct or valid, Claim 48 has been amended to replace the phrase “means for modifying” with a recitation that is not in means-plus-function form, as kindly suggested by the Examiner. It is believed that the rejection under Section 112, second paragraph, has been obviated, and its withdrawal is therefore respectfully requested.

The Office Action rejects Claims 29-32, 34-36, 39-42, 44-46 and 48 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,049,743 (*Baba*), and rejects Claim 38 under 35 U.S.C. 103(a) as being unpatentable over *Baba* in view of U.S. Patent Application Publication 2002/0110786 (*Diller*). Applicants respectfully traverse the rejections and submit that independent Claims 29, 39 and 48, together with the claims dependent therefrom, are patentably distinct from the cited prior art.

Independent Claim 29 is directed to a computer-aided design (CAD) system that includes a computer, a display device an input device, and at least one design tool. The

¹ Any examples presented herein are intended for illustrative purposes and are not to be construed to limit the scope of the claims.

computer directs the display device to display an image of a dental restoration body. The dental restoration body includes a plurality of distinct dentally specific indicia, where each indicium is a single, selectable, unique type of dental feature that is different from other types of the indicia.

Notably, to select a portion of the image of the dental restoration body that is to be modified, the input device inputs to the computer a command referencing any of the distinct dentally specific indicia. The selected portion is defined, at least in part, by one or more of the distinct dentally specific indicia referenced by the command, which indicia include a preparation border, an equator, a marginal crest, and/or a fissure.

Also notable is that the design tool enables the selected portion to be modified in any of a plurality of directions. When the command input to the computer references the preparation border, the selected portion extends from the preparation border to a center of an occlusal surface. When the command references the equator, the selected portion is located between the preparation border and the marginal crest. When the command references the marginal crest, the selected portion extends from the equator to the center of the occlusal surface. When the command references the fissure, the selected portion is the occlusal surface delimited by the marginal crest.

By virtue of the operation of the input device and the design tool, predefined areas of the image of the dental restoration body can easily be selected and modified, for example. Additionally, the dental restoration body can be constructed based on data representing the modifications made to the selected areas of the image of the dental restoration, for example.

Baba is understood to relate to a method of designing a dental prosthesis model of a crown or a bridge using a computer (*see* col. 1, lines 7-9). In *Baba*, the dental prosthesis model of the crown or the bridge is designed based on prepared pontic model data indicating standard

pontic models of individual teeth (*see* col. 4, lines 11-14). Each pontic model includes a characteristic morphology of a tooth corresponding to the pontic model (*see* col. 4, lines 29-34). The characteristic morphology of the tooth can include a cuspid apex, a groove and a ridge of an occlusal surface, a marginal ridge, a height of a contour, and a margin line corresponding to a gum line (*see* col. 4, lines 29-34). A configuration of a pontic model can be deformed by moving a point corresponding to the characteristic morphology on a screen (*see* col. 4, lines 44-50). As shown in FIG. 11 of *Baba*, a model deforming operation includes clicking with a mouse on a center position CP of a part to be deformed in a pontic model $P_{m(6)}$ and dragging the center position CP to a desired position CP' (*see* FIG. 11 and col. 9, lines 40-45). When the center position CP is dragged to the desired position CP', a deforming region $A_{(n)}$ that includes the point CP is deformed, without deforming adjacent regions (*see* col. 9, lines 45-52). To produce a smooth deformation, an amount of deformation becomes increasingly smaller away from the point CP (*see* col. 9, lines 52-55).

Applicants agree with the conclusion in the Office Action that *Baba* does not disclose distinct dentally specific indicia including an equator, a marginal crest, and a fissure (*see* Office Action, page 5). Moreover, nothing has been found, or pointed to, in *Baba* that teaches or suggests that, (i) when the point CP is a point of a preparation border, the deforming region $A_{(n)}$ extends from the preparation border to a center of an occlusal surface, (ii) when the point CP is a point of an equator, the deforming region $A_{(n)}$ is located between a preparation border and a marginal crest, (iii) when the point CP is a point of a marginal crest, the deforming region $A_{(n)}$ extends from an equator to a center of an occlusal surface, and, (iv) when the point CP is a point of a fissure, the deforming region $A_{(n)}$ is an occlusal surface delimited by a marginal crest.

More particularly, Applicants submit that nothing in *Baba* teaches or suggests a system that includes “an input device that inputs a command to the computer to reference any of the plurality of distinct dentally specific indicia to select a portion of the image to be modified, the selected portion being defined, at least in part, by one or more of the distinct dentally specific indicia referenced by the command,” as recited in Claim 29. In addition, Applicants submit that nothing in *Baba* teaches or suggests a system that includes “at least one design tool that enables the selected portion to be modified in any of a plurality of directions,” wherein, “when the command references the preparation border, the selected portion extends from the preparation border to a center of an occlusal surface,” wherein, “when the command references the equator, the selected portion is located between the preparation border and the marginal crest,” wherein, “when the command references the marginal crest, the selected portion extends from the equator to the center of the occlusal surface,” and wherein, “when the command references the fissure, the selected portion is the occlusal surface delimited by the marginal crest,” as recited in Claim 29.

Accordingly, Applicants submit that Claim 29 is patentable over *Baba*, and therefore withdrawal of the rejection of Claim 29 under 35 U.S.C. § 103(a) is respectfully requested. Independent Claims 39 and 48 include features sufficiently similar to those of Claim 29 that these claims are believed to be patentable over *Baba* for the reasons discussed above.

A review of the other art of record has failed to reveal anything that, in Applicants’ opinion, would remedy the deficiencies of *Baba* discussed above, as a reference against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in the present application depend from independent Claims 29 or 39 and are submitted to be patentable over the art of record for at least the same reasons. Because each dependent claim also is deemed to define an additional aspect of the invention, however, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and an early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should be directed to our address listed below.

Respectfully submitted,

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